

## CONTAINER CLOSURE CAP SYSTEM AND ASSOCIATED METHODS

### Field of the Invention

[0001] The present invention relates to the field of container closure caps and, more particularly, to the field of a container closure cap including a clip member.

### Background of the Invention

[0002] Containers for beverages come in several shapes and sizes. Further, closures for these containers have developed to accommodate the needs of consumers. For example, U.S. Patent No. 5,465,876 to Crisci discloses a container cap with a push-pull closure. More particularly, the container cap allows an active user to open the push-pull closure by axially moving a portion of the container. This may allow a user to open the container with minimal effort, but an active user, e.g., one that is rollerblading, walking, jogging, etc. may still find it difficult to carry the container while participating in such activities.

[0003] One attempt to ease the burden of carrying the container while participating in various activities is disclosed in U.S. Patent No. 6,273,283 to Terrana, et al.

This patent discloses a clip member integrally formed into a sidewall of the container. Production of such a container, however, may be quite complicated and expensive. A belt for carrying multiple containers is distributed under the tradename "The Endurance Belt". This belt is worn by a user, and includes a plurality of pouches having a specific shape for receiving a plurality of respective containers. This belt, however, may be cumbersome.

[0004] Another attempt to ease the burden of carrying a container is a bottled water hook distributed under the tradename "Aquahook". The bottled water hook is a removable plastic clip that snaps onto the neck of the bottle. The removable clip includes a ring, a top member, and a side member. The ring is suitably sized to slide over the neck of a bottle, for example. After the ring engages the neck of the water bottle, a user may use the bottled water hook to carry the water bottle on a belt. The bottled water hook, however, is not meant to be disposable and, accordingly, to be economically advantageous, the user must move the bottled water hook from water bottle to water bottle, i.e., the user must remove the bottled water hook from an empty water bottle, and reattach the bottled water hook to another water bottle.

[0005] Similar to the bottled water hook described above, U.S. Patent Application Serial No. 09/731,293 by Fadal, II et al., discloses a closure cap assembly for containers. The closure cap assembly includes a cap having a recess formed therein, and a clip member that engages the cap adjacent the recess.

### Summary of the Invention

[0006] In view of the foregoing background, it is therefore an object of the present invention to provide a container closure cap and system that allows a user to readily carry a container, and that is simple to manufacture.

[0007] These and other objects, features, and advantages of the present invention are provided by a container closure cap system comprising a container, and a container closure cap having a clip member. More specifically, the container may have a bottom surface, sidewalls extending upwardly therefrom, and a top surface opposite the bottom surface. The top surface may have an opening formed therein.

[0008] The container closure cap may be matingly connected to the container to engage the sidewalls and to cover the opening in the top surface. The container closure cap may comprise a lower retaining member, an upper cover member, and a clip member. The upper cover member may be detachably connected to the lower retaining member so that when the upper cover member is detached from the lower retaining member, the opening in the top surface of the container is exposed, and the lower retaining member remains engaged with the sidewalls of the container.

[0009] The clip member may be connected to the lower retaining member, and may have a top member extending outwardly from an outer periphery of the lower retaining member. The clip member may also include a side member connected to and extending downwardly from the top member. The clip member advantageously allows a user to clip the container to a belt, for example. Further, the

clip member advantageously remains on the bottle when the cover member is removed, minimizing the risk of losing the lower retaining member having the clip member connected thereto when the cover member is removed.

[0010] The lower retaining member and the clip member may advantageously be integrally formed as a monolithic unit. The upper cover member may be detachably connected to the lower retaining member using a perforated connection or a breakaway connection, for example.

[0011] The upper cover member may threadably engage the sidewalls of the container adjacent the top surface thereof. The container closure cap may further comprise a support rib extending between an inner surface of the top member and an inner surface of the side member.

[0012] The side member may extend downwardly from the top member to be substantially parallel to the sidewalls of the container, and an end of the side member may be angled outwardly to thereby define a flared end. The top member and the side member may have a thickness substantially similar to the thickness of the lower retaining member. The container closure cap may be made of polypropylene material, and the side member may have indicia on an outer surface thereof.

[0013] A method aspect of the present invention is for using a container closure cap. The method may comprise matingly connecting a container closure cap to a container, and detaching the upper cover member from the lower retaining member.

### Brief Description of the Drawings

[0014] FIG. 1 is a partial perspective view of a container closure cap system according to the present invention.

[0015] FIG. 2 is a partial perspective view of a container closure cap system including a container closure cap having clip member with a flared end according to the present invention.

[0016] FIG. 3 is a side elevation view of the container closure cap system illustrated in FIG. 2.

[0017] FIG. 4 is a front elevation view of the container closure cap system illustrated in FIG. 2.

[0018] FIG. 5 is a side elevation view of a plurality of vertically stacked container closure caps according to the present invention.

[0019] FIG. 6 is a side elevation view of a plurality of vertically stacked container closure caps, each including a support rib and a clip member having a flared end, according to the present invention.

[0020] FIG. 7 is a partial perspective view of the container closure cap system illustrated in FIG. 2.

[0021] FIG. 8 is a front elevation view of a container closure cap having indicia thereon according to the present invention.

[0022] FIGS. 9-11 are side elevation views of alternate embodiments of the container closure cap according to the present invention.

[0023] FIGS. 12 is a perspective view of an alternate embodiment of the container closure cap system according to the present invention.

### Detailed Description of the Preferred Embodiments

[0024] The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout, and prime, and multiple prime notations are used to indicate similar elements in alternate embodiments.

[0025] Referring initially to FIGS. 1-4, the container closure cap system 15 of the present invention is now described. The container closure cap system 15 includes a container 20, and a container closure cap 30 having a clip member 40. More particularly, the container 20 has a bottom surface 22, sidewalls 24 extending upwardly from the bottom surface, and a top surface 26 opposite the bottom surface. The top surface 26 illustratively has an opening 28 formed therein.

[0026] The container 20 may, for example, be a beverage container, as illustrated in FIGS. 1-4, or any other type of container, as illustrated in the alternate embodiments of the present invention, and as will be discussed in greater detail below. The container 20 illustrated in FIGS. 1-4 is substantially cylindrical. More particularly, the bottom surface 22 of the container 20 may have a substantially arcuate shape. The container 20 may also have a neck adjacent the top surface 26, and a lip 25 connected to the neck. The sidewalls 24 of the

container 20 above the lip 25 have a smaller circumference than the sidewalls of the container below the lip.

[0027] The container closure cap 30 is illustratively matingly connected to the container 20 to engage the sidewalls 24 of the container above lip 25. The container closure cap 30 also covers the opening 28 in the top surface 26 of the container 20.

[0028] The container closure cap 30 comprises a lower retaining member 32, and an upper cover member 34 detachably connected to the lower retaining member. When the upper cover member 34 is detached from the lower retaining member 32, the opening 28 in the top surface 26 of the container 20 is exposed, and the lower retaining member remains engaged with the sidewalls 24 of the container above the lip 25. The lower retaining member 32 may have a ring shape, for example, and preferably has a circumference slightly larger than the circumference of the top surface 26 of the container 20.

[0029] The upper cover member 34 illustratively includes a top surface 35 and sidewalls 36 extending downwardly therefrom. The top surface 35 of the upper cover member 34 is preferably arcuate, and the sidewalls 36 are connected to the outer periphery of the top surface of the upper cover member. More specifically, the top surface 35 of the upper cover member 34 and the sidewalls 36 of the upper cover member are preferably integrally formed as a monolithic unit. The sidewalls 36 of the upper cover member 34 may have ribs formed therein to allow a user to better grip the upper portion when removing it from the top surface 28 of the container 20.

[0030] The container closure cap 30 further illustratively comprises a clip member 40 connected to the lower retaining member 32. The clip member 40 has a top member 42 extending outwardly from an outer periphery of the lower retaining member 32, and a side member 44 connected to and extending downwardly from the top member. The side member 44 of the clip member 40 preferably extends downwardly to be substantially parallel with the sidewalls 24 of the container 20, but those skilled in the art will appreciate that the side member may also extend downward from the top member at an angle so that it is not parallel with the sidewalls of the container.

[0031] As perhaps best illustrated in FIG. 7, the container closure cap system 15 advantageously allows a user to carry a container 20 on a belt, for example. This is especially advantageous for users that participate in activities, such as jogging, walking, cycling, rollerblading, or any other type of activity. The configuration of the clip member 40 advantageously allows the user to detach the upper cover member 34 from the lower retaining member 32 without removing the clip member. More specifically, and as discussed in detail above, the clip member 40 is connected to the lower retaining member 32, which remains connected to the sidewalls 24 of the container 20 above the lip 25 when the upper cover member 34 is removed.

[0032] The lower retaining member 32 and the clip member 40 are preferably integrally formed as a monolithic unit. Accordingly, ease of manufacturing makes the container closure cap 30 advantageous. The container closure cap 30 may be manufactured using



injection molding, for example, or any other form of manufacturing, as understood by those skilled in the art.

[0033] The upper cover member 34 may be detachably connected to the lower retaining member 32 using a perforated connection, or a breakaway connection, as understood by those skilled in the art. More specifically, a user may rotate the upper cover member 34 in a predetermined direction to separate the upper cover member from the lower retaining member 32. The upper cover member 34 may be readily replaced over the top surface 26 of the container 20 and adjacent the sidewalls 24 above the lip 25. Those skilled in the art will appreciate that any other connection between the lower retaining member 32 and the upper cover member 34 which allows the upper cover member to be readily detached and removed from the lower retaining member may also be used.

[0034] The outer periphery of the sidewalls 24 of the container 20 adjacent the top surface 26 may be threaded. Further, the inner periphery of the sidewalls 36 of the upper cover member 34 may also be threaded. Accordingly, the upper cover member 34 may threadably engage the sidewalls 24 of the container 20 adjacent the top surface 26 above the lip 25. Those skilled in the art will appreciate that the upper cover member 34 may also engage the container 20 in any other way, e.g., slide on connection.

[0035] As illustrated in FIG. 3, the container closure cap 30 may include a support rib 50 extending between an inner surface of the top member 42 and an inner surface of the side member 44. More specifically, the support rib 50 provides additional strength to the clip member 40. Those skilled in the art will appreciate that the

support rib 50 is preferably positioned so as not to interfere with a user's ability to carry the container 20 on a belt, for example.

[0036] Referring now more specifically to FIGS. 2-4, another aspect of the clip member 40 is now described in greater detail. An end of the side member 44 may illustratively be angled outwardly away from the sidewall 24 of the container 20 to define a flared end 46. The flared end 46 of the clip member 40 advantageously allows a user to more readily place and remove a container 20 fitted with a container closure cap 30 on a belt, for example.

[0037] The top member 42 and the side member 44 may have a thickness substantially similar to the thickness of the lower retaining member 32. The similar thicknesses are advantageous during the manufacturing process. The container 20 may be a plastic container, for example, or be made of any other type of material, as understood by those skilled in the art. The container closure cap 30 may be made of polypropylene material, polyethylene terephthalate (PET) material, or any other material suitable for forming the container closure cap, as understood by those skilled in the art.

[0038] The container closure caps 30 may be stacked in a vertical formation, for example, as perhaps best illustrated in FIGS. 5 and 6. The container closure caps 30 illustrated in FIG. 6 include the support rib 50 extending between the top member 42 and the side member 44. The container closure caps 30 in FIG. 6 also illustratively include the flared end 46 described above. Those skilled in the art will appreciate that the container closure cap 30 may include neither of, one of,

or both of the support rib 50, and the flared end 46. In FIGS. 5 and 6, the upper most container closure cap 30 is labeled. For simplicity, the remaining container closure caps have not been labeled.

[0039] The stacked configuration of the container closure caps 30 is advantageous during the manufacturing process. The vertically stacked container closure caps 30 may be readily used in a conventional bottling process, for example, to cap respective containers 20. The container closure caps 30 are also advantageous during the manufacturing process as no alterations to the containers 20 are necessary to receive the container closure caps of the present invention. Those skilled in the art will appreciate that the side member 44 of the clip member 40 may be angled slightly outwardly so that the container closure caps 30 may be stacked in a more vertical configuration than illustrated in FIGS. 5 and 6.

[0040] The container closure cap 30 is preferably disposable and accordingly are advantageously cost efficient. A disposable container closure cap 30 is advantageous because it may be readily available on many types of containers, eliminating the need to move the container closure cap from one container to another.

[0041] As perhaps best illustrated in FIG. 8, the side member 44 may have indicia 52 on an outer surface thereof. The indicia 52 may, for example, be advertising indicia. Those skilled in the art will appreciate that the indicia 52 may be any other kind of indicia as well, such as the user's name or a catch phrase, for example. The indicia 52 may be printed on the side member 44, may be a decal, or may be any other type of indicia, as understood by those skilled in the art.

[0042] Referring now additionally to FIGS. 9-12, alternate embodiments of the container closure cap system 15 and the container closure cap 30 will now be discussed. The container closure cap system 15' illustrated in FIG. 9, for example, is for a snack container 20'. The upper cover member 34' of the container closure cap 30' of this embodiment of the present invention preferably snaps onto and off of the lower retaining member 32'. The other elements of this embodiment of the present invention are similar to those of the first embodiment, are labeled with prime notation, and require no further discussion herein.

[0043] The embodiment of the container closure cap 30" illustrated in FIGS. 10-11 includes an upper cover members 34" having a push-pull closure. The upper cover members 34" may be axially moved to allow access to the contents within a container. The other elements of this embodiment of the container closure cap 30" are similar to those of the first embodiment, are labeled with double prime notation, and require no further discussion herein.

[0044] The embodiment of the container closure cap system 15''' illustrated in FIG. 12 is directed to a container 20''' such as for use with cleaning products, for example. The upper cover member 34''' of the container closure cap 30''' includes a spray nozzle. The clip member 40''' is illustratively connected to the lower retaining member 32''' of the container closure cap 30'''. The other elements of this embodiment of the container closure cap 30''' are similar to those of previous embodiments, are labeled with triple-prime notation, and require no further discussion herein.

[0045] A method aspect of the present invention is for using a container closure cap 30. The method includes matingly connecting a container closure cap 30 to a container 20. The method also includes detaching the upper cover member 34 from the lower retaining member 32 so that the opening 28 in the top surface 26 of the container 20 is exposed and the lower retaining member remains engaged with the sidewalls 24 of the container when the top surface of the container is exposed.

[0046] Many modifications and other embodiments of the invention will come to the mind of one skilled in the art having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is understood that the invention is not to be limited to the specific embodiments disclosed, and that modifications and embodiments are intended to be included within the scope of the appended claims.